

REMARKS

Claims 1, 2, 4-6, 9-11, 17, and 19-24 are presented for further examination.

Claims 1, 5, 10, 17, 19, 20, and 22-24 have been amended.

In the Office Action mailed June 2, 2004, the Examiner rejected claims 1-2, 4-6, and 9-11 under 35 U.S.C. § 112, first paragraph and second paragraph for informalities in the claims. In response thereto, applicants have amended the claims to overcome the lack of support in the specification, lack of antecedent basis, or to remove the offending language, as set forth more fully above in the amended claims.

Claims 1-2, 9-10, 17, and 19-23 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 5,576,875 ("Chawki et al.") in view of U.S. Patent No. 5,796,501 ("Sotom et al."). Claims 4 and 24 were rejected as obvious over Chawki et al. and Sotom et al. and further in view of U.S. Patent No. 6,020,986 ("Ball"). Claim 11 was rejected as obvious over Chawki et al. and Sotom et al. and further in view of U.S. Patent No. 6,542,511 ("Livermore et al."). Claims 5-6 were found to be allowable.

Applicants incorporate herein by reference in its entirety the arguments presented in the amendment filed on March 5, 2004.

More particularly, the technical features of the present invention, as disclosed at page 8, lines 4-13, of the specification state as follows:

The network structure of the present invention has the following four prerequisites. First, all the sub-ring controllers share information on IP addresses of all the terminals connected to the whole network and the wavelength allocated to the sub-ring to which its IP address belongs. Second, all the terminals connected to a given sub-ring communicate with corresponding sub-ring controllers using different wavelengths. The terminals connected to the different sub-rings, however, may reuse the same wavelength. Third, all the sub-ring controllers connected to the main ring communicate with the main ring controller using different wavelengths. Fourth, respective terminals communicate via the sub-ring controllers each of which is connected to the sub-rings, respectively, and all the sub-ring controllers communicate via a single main ring controller managing them.

As described above, each of the terminals communicates with a single sub-ring controller, and all of the sub-ring controllers communicate via a single main ring controller that

manages the sub-ring controllers. This arrangement prevents a wavelength collision occurring at the time when the same wavelength is shared throughout the sub-ring.

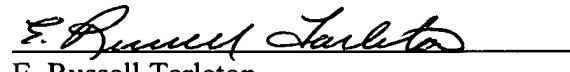
Using the structure and features of the present invention, it is clear that the number of wavelengths used throughout the entire network can be minimized, and at the same time the number of terminals that can be accommodated is maximized. Furthermore, each of the connection nodes of the two main rings can be mutually connected by using a gateway controller for connection to the other main ring instead of the sub-ring, and thus the "IPOW" network can be horizontally extended. Nowhere do Chawki et al. or Sotom et al., taken alone or in any combination therewith teach or suggest the foregoing features. Independent claims 1, 17, and 22 have been amended to include the structure emphasized above and to more clearly recite the technical features of the present invention.

Hence, claim 1 now recites that each of the connection nodes is connected to a sub-ring via a sub-ring controller, and that all the sub-ring controllers share information on IP addresses of all the terminals connected to the entire network and a wavelength allocated to the sub-ring to which its IP address belongs, and the sub-ring controllers communicate with the main ring controller that manages the sub-ring controllers using different wavelengths. Claim 1 further recites all the terminals connected to a given sub-ring communicate with corresponding sub-ring controllers using different wavelengths, with respective terminals communicating via the sub-ring controllers, each of which is connected to the sub-rings, respectively. In view of these features as an aspect of the entire combination recited in claims 1, 17, and 22, it is clear that each of these independent claims is allowable over the references cited and applied by the Examiner. In view of the arguments submitted with the response on March 5, 2004, and the discussion herein, applicants respectfully submit that all of the claims remaining in this application are now clearly in condition for allowance. Consequently, early and favorable action allowing these claims and passing this case to issuance is respectfully solicited. In the event the Examiner finds minor informalities that can be resolved by telephone conference, the Examiner is urged contact applicants' undersigned representative by telephone at (206) 622-4900 in order to expeditiously resolve prosecution of this application.

The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

All of the claims remaining in the application are now clearly allowable. Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,  
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